REMARKS

Claims 1-54 are all the claims pending in the application. Claims 1, 2, 17-21, and 36-40

have been examined and claims 3-16 and 22-35 have been withdrawn from consideration as

being drawn to a non-elected invention. By this Amendment, Applicant adds claims 53 and 54.

Furthermore, claims 1, 18-20, 37, 40-46, and 48-52 are editorially amended to fix minor

informalities. The amendments to claims 1, 18-20, 37, 40-46, and 48-52 were made for reasons

of precision of language and consistency, and do not narrow the literal scope of the claims and

thus do not implicate an estoppel in the application of the doctrine of equivalents. The

amendments to claims 1, 18-20, 37, 40-46, and 48-52 were not made for reasons of patentability.

Also, claims 38 and 39 are amended to further clarify the invention.

Preliminary Matter

As a preliminary matter, Applicant thanks the Examiner for initialing the references listed

on Form PTO/SB/08 A & B filed with the Information Disclosure Statement on September 1,

2004.

Claim Objections

The Examiner has objected to claims 1, 18, 20, 37-46, and 48-52 for minor informalities.

Applicant has editorially amended these claims in a manner believed to overcome the

Examiner's objections. Accordingly, Applicant respectfully requests the Examiner to reconsider

and to withdraw these objections.

<u>Claims rejected under 37 C.F.R. § 102(b)</u>

Claims 1, 2, 17-21 and 36-39 are rejected under 35 U.S.C. § 102(b) as being allegedly

anticipated by U.S. Patent No. 5,991,707 to Searles et al. (hereinafter "Searles"). Applicant

respectfully traverses these rejections and respectfully requests the Examiner to reconsider in

view of the following comments.

For example, independent claim 1 recites: "said disorder indicator provides non-specific

failure indications..." The Examiner alleges that Searles's method of diagnosing system

reliability problems and/or system failure in a physical system through the predictive

identification of errant fluctuations in one or more operating parameters of said physical system

is equivalent to having a disorder indicator provide non-specific failure indications (see page 4 of

the Office Action). Applicant respectfully disagrees. Applicant has carefully studied Searles

method of diagnosing reliability problems of a system and system failure, which is not

equivalent to the disorder indicator providing non-specific failure indications.

To be a proper anticipation rejection, the reference must teach <u>every element and</u>

<u>recitation of the Applicant's claims</u>. Rejections under 35 U.S.C. § 102 are proper only when the

claimed subject matter is identically disclosed or described in the prior art. Thus, the reference

must ***clearly and unequivocally disclose*** every element and recitation of the claimed invention.

For example, an illustrative, non-limiting embodiment of the present invention discloses

a top down approach for detecting *general abnormality or ill defined, unexpected phenomena.*

That is, in the exemplary embodiment, the monitoring method simply attempts to find patterns

indicative of a fault in the byproducts or waste of the system. This pattern may be a normally

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distributed pattern or it can be a surge pattern that cannot be mapped to a normal distribution

pattern. Thereby, no detailed knowledge of the system is required. This fault, for example, is a

general abnormality indicating that something is wrong without requiring specific knowledge as

to the cause of the problem or an indication of a specific failure. In the exemplary embodiment,

the system can be applicable to a variety of devices. This passage is provided by way of an

example only and is not intended to limit the scope of the claims in any way.

In general, Searles discloses a method for diagnosing system reliability problems and/or

system failure in a physical system through the predictive identification of errant fluctuations in

one or more operating parameters of the physical system (*see* Abstract). Searles teaches that the

physical system being monitored can be an electrical system, a chemical system or a mechanical

system. The operating parameter being measured is a performance or condition parameter such

as voltage, resistance, impedance, amperage, or the like, or an environmental parameter such as

temperature, humidity or the like within the system or in the vicinity of the system, or a plurality

of such parameters. The parameter can be monitored "indirectly" through dependent and/or

related output signals (col. 3, lines 19 to 45).

In particular, Searles discloses that the method for diagnosing is substantially

independent of, and not dictated by externally prescribed boundaries, thresholds, operating

models or manufacturer's specifications (col. 2, lines 31 to 34). Searles discloses taking a series

of measurement sets of at least one system operating parameter, and determining statistically

therefrom the probability that the mean value of any of the sets reflects an errant fluctuation of

significance, without reference to standards, criteria or patterns external to the series other than at

times a parent-group mean and/or parent-group standard deviation. Searles teaches identifying

or defining significantly errant operating-parameter values statistically from a series of

measurement sets (col. 2, lines 42 to 54; col. 24, lines 11 to 37). That is, Searles teaches using

"Student's t test" by determining whether the probability that the departure of one or more

operating parameters from a parent mean or normalized mean value is due to chance, or whether

instead it indicates the approach of a system decline and/or failure (col. 3, lines 61 to 67).

Searles discloses that the identification of a significantly errant or deviant parameter activates a

signal or notification sign indicating the need for system maintenance and/or system shutdown or

shut-off. System maintenance can include protective system adjustment, component replacement

or system replacement (col. 2, lines 60 to 65).

Searles, however, fails to disclose <u>what types of system failures are being monitored</u>.

That is, Searles only teaches that <u>fluctuations in various parameters are used to identify faults</u>

<u>within the system</u>. What types of system failures is simply not the focus of Searles teachings.

Searles does not address what types of faults are being identified with these parameters. Searles

does not disclose a disorder indicator providing non-specific failure indications. That is, Searles

does not teach or suggest that the faults are used to identify general abnormalities, ill-defined or

unexpected phenomena within the system as opposed to specific faults.

Therefore, "said disorder indicator provides non-specific failure indications..." is not

taught or suggested by Searles, which lacks any teaching as to the type of faults being monitored.

For at least this exemplary reason, claim 1 is patentably distinguishable from Searles. Therefore,

Applicant respectfully requests the Examiner to withdraw this rejection of claim 1. Claims 2, 17, and 18 are patentable at least by virtue of their dependency on claim 1.

Moreover, claim 19 recites: "said disorder indicator provides failure indications of general abnormalities..." Applicant respectfully submits that Searles fails to teach or suggest failure indications of general abnormalities. As explained above, Searles does not disclose what types of faults are being monitored using these various parameters. Searles focuses on creating a statistical model of a parameter or parameters. Searles fails to disclose that the disorder indicator provides failure indications of general abnormalities. In short, Applicant respectfully submits that claim 19 is patentably distinguishable from Searles.

Claim 20 recite features similar to some of the features argued above with respect to claim 1. Therefore, these arguments are respectfully submitted to apply with equal force here. In view of these similar recitations, Applicant respectfully submits that claim 20 is patentably distinguishable from Searles. Claims 21, 36, and 37 are patentable at least by virtue of their dependency on claim 20.

In addition, claim 20 recites: "said disorder indicator provides non-specific failure indications based on a top down approach." Applicant respectfully submits that Searles fails to teach or suggest failure indications based on top down approach. For at least this additional reason, Applicant respectfully submits that claim 20 is patentably distinguishable from Searles.

Next, independent claim 38 recites: "selecting a measurable indicator of a level of disorder in said software system." Searles discloses only a monitoring system for <u>physical</u> systems. That is, Searles teaches that the physical system being monitored can be an electrical

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system, a chemical system, or a mechanical system. Searles does not disclose monitoring

software systems. For at least this reason, claim 38 is patentably distinguishable from Searles.

Claims 39 recites features similar to the features argued above with respect to claim 38.

Therefore, these arguments are respectfully submitted to apply with equal force here. In view of

these similar recitations, Applicant respectfully submits that claim 39 is patentably

distinguishable from Searles.

Allowable Subject Matter

Applicant thanks the Examiner for allowing claims 40-52.

New Claims

In order to provide more varied protection, Applicant adds claims 53 and 54. Claims 53

and 54 are patentable at least by virtue of their dependency on claims 1 and 19, respectively.

Moreover, claim 53 recites: "the apparatus is operable to determine whether to issue the

failure prediction when the measured disorder indicator is not a normal distribution pattern."

Searles system, on the other hand, may be incapable of identifying ill-defined or unexpected

phenomena because in Searles, the measured parameters behave in a normal distribution pattern

(Gaussian distribution). Specifically, Searles teaches the system adopting the "Student's t test" in

determining the probability that the departure of one or more operating parameters from a parent

mean or normalized mean value is due to chance (col. 3, lines 61 to 67; col. 4, lines 1 to 32).

Moreover, as is clear from the Searles' calculations described in col. 5, line 19 to col. 6, line 42,

in Searles, the parameter values change gradually. In other words, in Searles, a certain surge of

the parameter may be <u>disregarded as chance</u> (see col. 3, lines 61 to 67). That is, Searles fails to

teach or suggest a system capable of identifying ill-defined or unexpected phenomena even when

the measured parameters do not behave in a normal distribution pattern. For at least this

additional reason, claim 53 is patentable over Searles.

Similarly, claim 54 recites: "the apparatus is operable to determine whether to provide the

failure indications when said measured disorder indicator behaves in a surge function pattern."

As explained above, Searles only teaches the parameters behaving in a normal distribution

pattern and fails to teach or suggest evaluating parameters that may behave as a surge function.

Therefore, for at least analogous reasons, claim 54 is patentable over Searles.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly invited to contact the undersigned attorney at the telephone number listed below.

Amendment under 37 C.F.R. § 1.111
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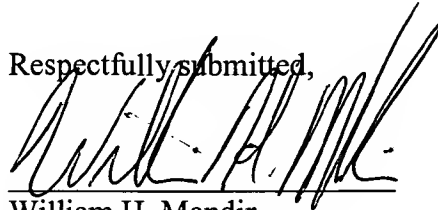
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